

## FURTHER EVIDENCE OF THE DISTRIBUTION OF SOME BOREAL LEPIDOPTERA IN THE SIERRA NEVADA<sup>1</sup>

C. H. ERIKSEN

*Los Angeles State College, Los Angeles, California*

EXCEPT WHERE ROADS penetrate the high country, little or only scanty information is available concerning the animal life of the high Sierra of California. This condition is extant because these mountains are high, rugged and largely accessible only by trail. The fact also that collecting gear must be packed in and out encourages few people to undertake such studies.

Our knowledge of the Lepidoptera fauna of the Sierra stems largely from the work of Garth (1935) and Tilden (1959). Garth's study of the *Butterflies of Yosemite National Park* is notable since he not only provides a list of species taken within the confines of the park, but relates them to the life-zones in which they are normally found to fly. Tilden has refined the latter concept in his Tioga Pass studies by listing associations of smaller scope than life-zones.

While backpacking the John Muir Trail<sup>2</sup> during the summers of 1953, 1954 and 1955, the author made spot collections of Lepidoptera at various locations along the route (Figure 1). Such was a brief attempt to add information similar to that of Garth and Tilden to our knowledge of the day-flying Lepidoptera in high areas from Yosemite on the north to Mount Whitney on the south. All forms collected and altitudes at which they were taken are listed in Table 1. To alleviate any confusion, all nomenclature is after McDunnough (1938). Altitudes were determined from Starr (1953).

Since Garth (1935) and Tilden (1959) have shown that various species fly only within certain altitudinal ranges while others are unrestricted in their flight, there is little need to repeat similar findings here. However, the data collected does extend the known altitudinal range of several species. The following were taken at elevations higher than previously recorded and are associated with the life-zone of this extension.

<sup>1</sup>My thanks to Nelson Baker, Santa Barbara Museum of Natural History, for help with identification of the material and W. Hovanitz for aid in preparation of this paper.

<sup>2</sup>The John Muir Trail follows a 225 mile route along the Sierra crest from Yosemite Valley on the north to Mount Whitney on the south. Except for a short distance out of Yosemite Valley (elevation 4,000'), altitudes range from approximately 7,000' to 14,500'.

- Argynnis mormonia* (Arctic-Alpine)  
*Euphydryas chalcedona* (Transition, Canadian)  
*Lycaena helloides* (Canadian, Hudsonian)  
*Plebeius aquilo podarce* (Arctic-Alpine)  
*Plebeius saepiolus* (Arctic-Alpine)  
*Plebeius icarioides* (Hudsonian, Arctic-Alpine)  
*Plebeius acmon* (Hudsonian)

Garth does not list *Lycaena helloides* above the Transition zone nor *Plebeius saepiolus* above the Hudsonian. Even though Tilden does not actually say, he intimates that both species transcend all zones. In the event that any confusion may arise, both species are included in the above list.

It is of interest that those forms listed in this paper, which also are found in Colorado, have already been collected in that state from life-zones here described as extensions (Brown *et al*, 1957).

#### LITERATURE CITED

- BROWN, F. M., D. Eff and B. Rotger. 1957. Colorado Butterflies. *Proc. Denver Mus. Nat. Hist.*, Nos. 3-7:1-368.
- GARTH, JOHN S. 1935. Butterflies of Yosemite National Park. *Bull. So. Cal. Acad. Sci.*, 34(1):1-39.
- McDUNNOUGH, J. 1938. Check List of the Lepidoptera of Canada and the United States of America: Part I, Macrolepidoptera. *Mem. So. Cal. Acad. Sci.*, 1:1-275.
- STARR, JR., WALTER A. 1953. Guide to the John Muir Trail and the High Sierra Region. *Sierra Club, San Francisco*, 130 pp.
- TILDEN, J. W. 1959. The Butterfly Associations of Tioga Pass. *Wasmann J. Biol.*, 17(2):249-271.

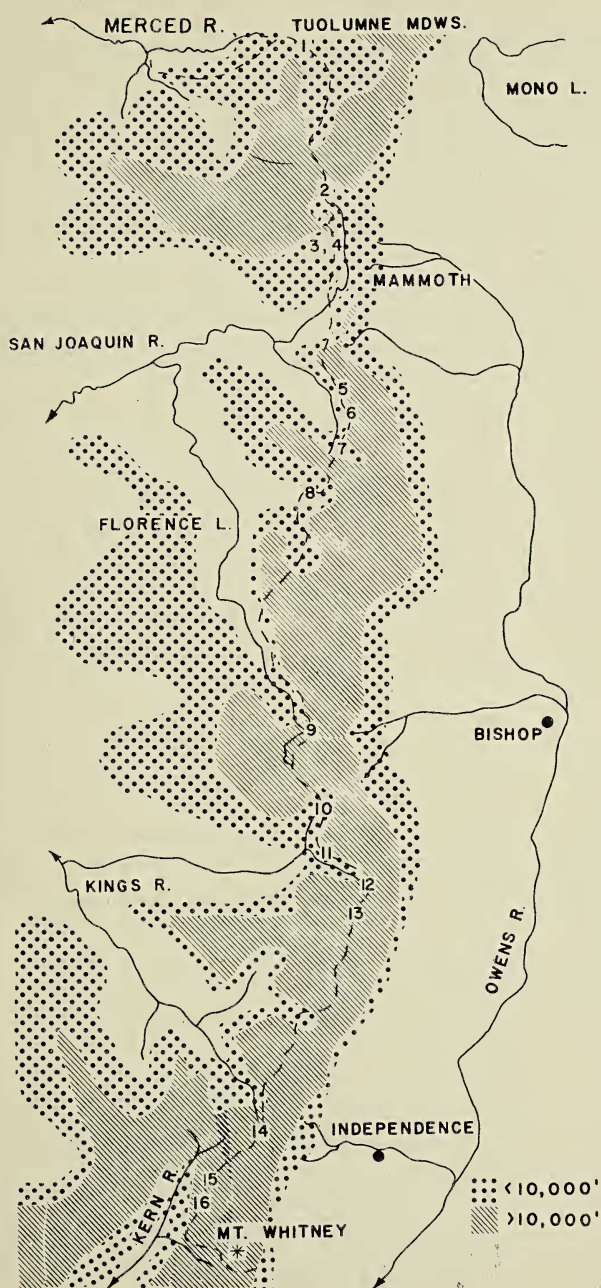


Figure 1. Collection Sites Along the John Muir Trail (Site number refers to Table 1)

	Canadian		Hudsonian								Arctic Alpine					
	Map Location Number		1	4	3	10	2	6	5	7	12	9	14	15	16	13
	Palisade Creek 8,125' : 7-31-55	8	11													
	Quail Meadows 7,700' : 7-8-54															
	<i>Papilio zelicaon</i> Luc.	1				1										
	<i>Papilio rutulus</i> Luc.	1														2
	<i>Parnassius clodius</i> Men.	1														
	<i>Colias eurytheme</i> Bdv.	1	2										1	6		3
	<i>Colias behrii</i> Edw.															
	<i>Pieris sisymbrii</i> Bdv.															
	<i>Pieris occidentalis</i> Reak.															
	<i>Argynnis montivaga</i> Behr															
	<i>Argynnis mormonia</i> Bdv.															
	<i>Brenthis epithore</i> Edw.	1														
	<i>Euphydryas chalcedona</i> Dblg. & Hew.															
	<i>Euphydryas sierra</i> Wgt.															
	<i>Euphydryas nubigena</i> Behr															
	<i>Melitaea palla</i> Bdv.	1														
	<i>Phyciodes montana</i> Behr	8	3													
	<i>Polygonia zephyrus</i> Edw.															

Table 1.  
John Muir Trail Collection  
Sites, Listed by Elevation,  
and the Species and Number  
Taken

